

Unsevering the external argument: evidence from V-*de/bu*-V compounds in Mandarin Chinese

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- 1 Introducing arguments
- 2 Mandarin *V-de/bu-V* compounds
- 3 Proposal
- 4 Prediction
- 5 Alternative analyses
- 6 Conclusion

Argument structure



- (1) *John arrived the vase.
The vase arrived.

Argument structure



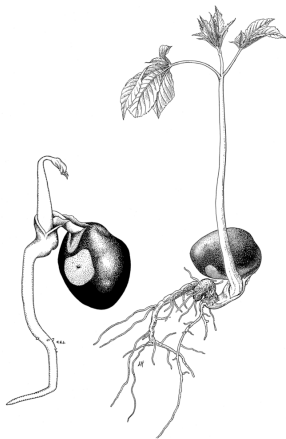
- (1) *John arrived the vase.
The vase arrived.
- (2) John destroyed the vase.
*The vase destroyed.

Argument structure

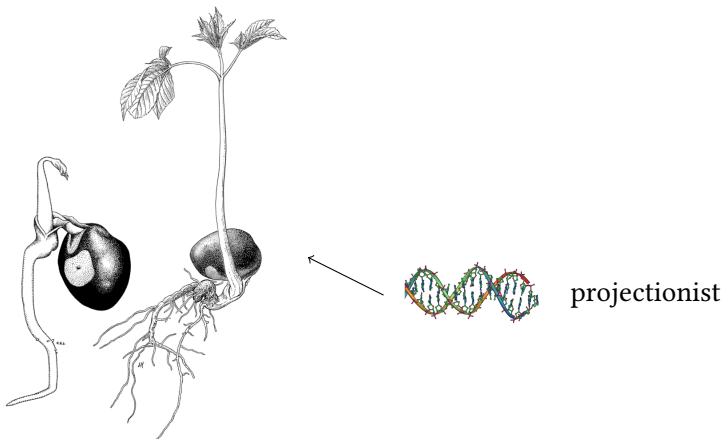


- (1) *John arrived the vase.
The vase arrived.
- (2) John destroyed the vase.
*The vase destroyed.
- (3) John broke the vase.
The vase broke.

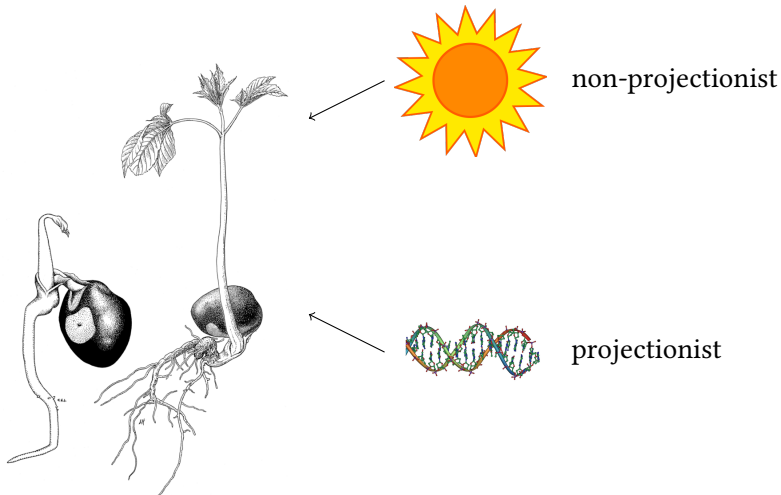
Two approaches to argument structure



Two approaches to argument structure



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Two approaches to argument structure

Projectionist approach



Non-projectionist approach



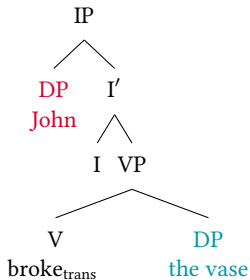
Two approaches to argument structure



Projectionist approach



(4)



Non-projectionist approach



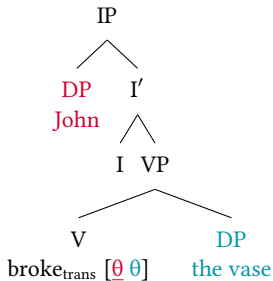
Two approaches to argument structure



Projectionist approach



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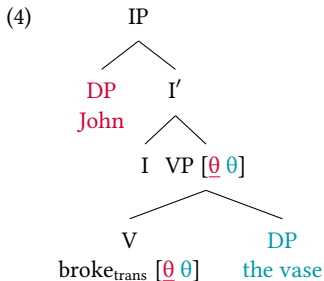
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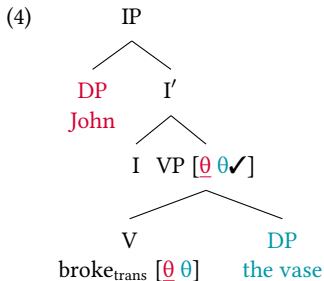
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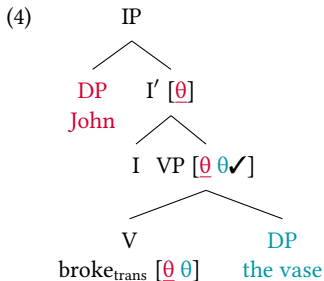
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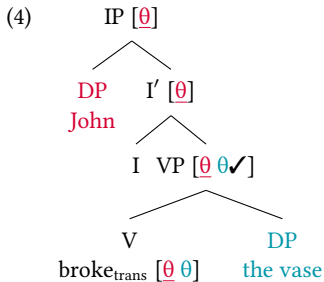
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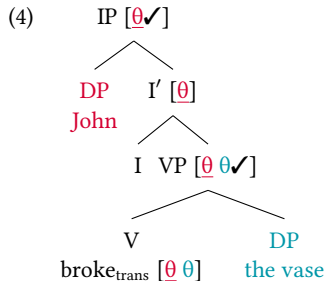
Non-projectionist approach



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Projectionist approach



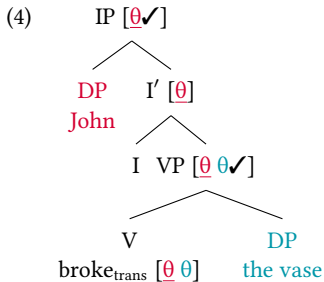
Non-projectionist approach



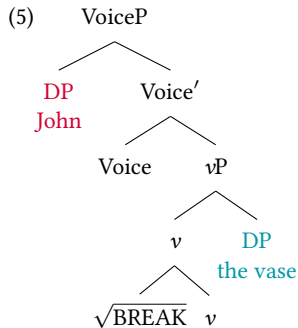
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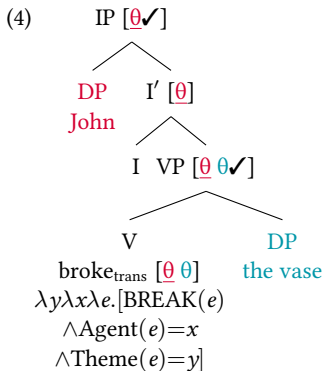
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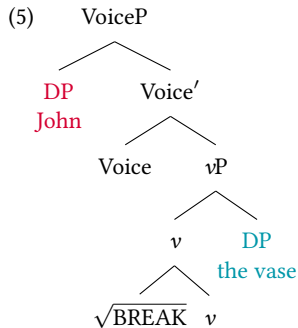
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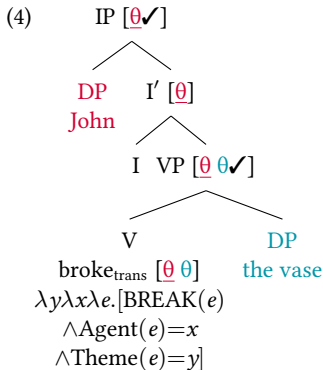
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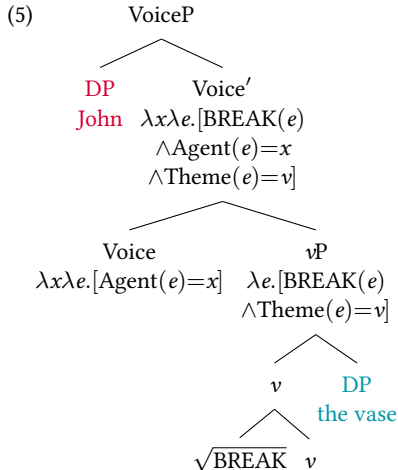
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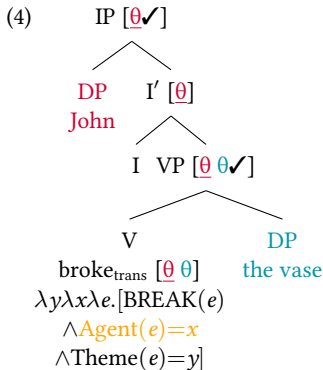
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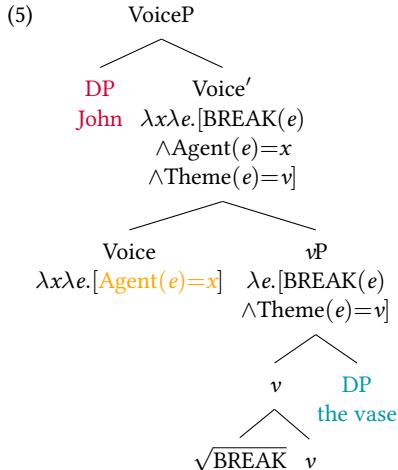
Two approaches to argument structure



Projectionist approach



Non-projectionist approach



Against the non-projectionist approach



- Kratzer (1996) proposed that the external argument be severed from the verb (see also Marantz 1984).

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Against the non-projectionist approach

- Kratzer (1996) proposed that the external argument be severed from the verb (see also Marantz 1984).
- Lin (2001) proposed that all arguments in Mandarin verbs are introduced by light verbs external to the lexical verb.
- However, I will show that V-*de/bu*-V compounds in Mandarin Chinese provide evidence against the non-projectionist approach.



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Mandarin V-*de/bu*-V compounds



V-*de/bu*-V = modal *de/bu* + V-V resultative

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Mandarin V-*de/bu*-V compounds



Sentences with V-*de/bu*-V compounds have a modal interpretation.

(6) 老魏踢得断那条木板。

Lǎo Wèi tī-dé-duàn nà tiáo mùbǎn.

Lao Wei kick-DE-snap that CLF plank

‘Lao Wei can make that plank snap by kicking.’

(Williams 2005:256)

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Mandarin V-*de/bu*-V compounds



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‘Lao Wei **cannot** make that plank snap by kicking.’ (adapted from Williams 2005:256)

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‘Lao Wei **cannot** make that plank snap by kicking.’ (adapted from Williams 2005:256)

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Lao Wei not can kick-snap that CLF plank

‘Lao Wei **cannot** make that plank snap by kicking.’

Sentences with V-*de/bu*-V compounds have a modal interpretation.

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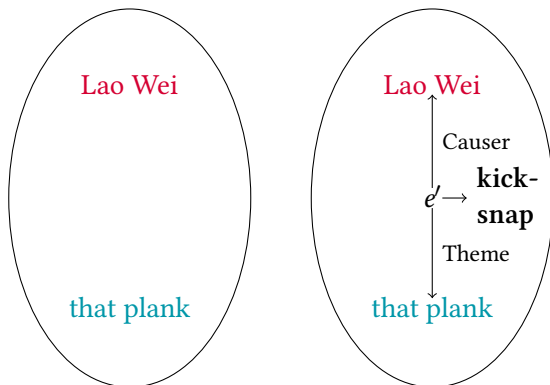
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Lao Wei not can kick-snap that CLF plank

‘Lao Wei **cannot** make that plank snap by kicking.’

Mandarin V-*de*/*bu*-V compounds

Modals quantify over possible worlds (Kripke 1959, 1963 *et seq.*).



actual world w \xrightarrow{R} possible world w'

Mandarin V-*de/bu*-V compounds



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Mandarin V-*de/bu*-V compounds

Not all disyllabic predicates have V-*de/bu*-V counterparts.

(10) 张三明白了李四的意思。

Zhāngsān míngbái-le Lǐsì de yìsì.

Zhangsan understand-PFV Lisi DE meaning

‘Zhangsan understood what Lisi meant.’

Mandarin V-*de/bu*-V compounds



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‘Zhangsan understood what Lisi meant.’

- (11) *张三明 {得/不} 白李四的意思。

**Zhāngsān míng-{dé/bù}-bái Lǐsì de yìsì.*

Zhangsan under-DE/BU-stand **Lisi** DE meaning

Intended: ‘Zhangsan {can/cannot} understand what Lisi meant.’

Mandarin V-*de/bu*-V compounds



V-*de/bu*-V compounds are derived from V-V resultative compounds.

- (12) 老魏踢断了那条木板。

Lǎo Wèi tī-duàn-le nà tiáo mùbǎn.

Lao Wei kick-snap-PFV that CLF plank

‘Lao Wei caused the plank to snap by kicking it.’

- (13) 老魏踢{得/不}断那条木板。

Lǎo Wèi tī-{dé/bù}-duàn nà tiáo mùbǎn.

Lao Wei kick-DE/BU-snap that CLF plank

‘Lao Wei **could/n’t** cause the plank to snap by kicking it.’

Mandarin V-*de/bu*-V compounds



V-*de/bu*-V = modal *de/bu* + V-V resultative

Mandarin V-*de/bu*-V compounds



$$V\text{-}de/bu\text{-}V = \text{modal } de/bu + \underbrace{V\text{-}V \text{ resultative}}_{\text{change of state}}$$

Mandarin V-*de/bu*-V compounds



$$\underbrace{\text{V-}de/bu\text{-V}}_{\text{state}} = \text{modal } de/bu + \underbrace{\text{V-V resultative}}_{\text{change of state}}$$

Mandarin V-*de/bu*-V compounds



Sentences with V-*de/bu*-V compounds are stative.

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Lao Wei PROG kick-DE/BU-snap that CLF plank

‘*Lao Wei is being able/unable to kick and snap that plank.’

Mandarin V-*de/bu*-V compounds



Sentences with V-*de/bu*-V compounds are stative.

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**Lǎo Wèi* zài tī-{dé/bù}-duàn nà tiáo mùbǎn.

Lao Wei PROG kick-DE/BU-snap that CLF plank

‘*Lao Wei is being able/unable to kick and snap that plank.’

(15) *踢 {得/不} 断那条木板！

**Tī*-{dé/bù}-duàn nà tiáo mùbǎn!

kick-DE/BU-snap that CLF plank

‘*Be able/unable to kick and snap that plank!’



But V-*de/bu*-V compounds can in principle undergo aspectual coercion (De Swart 1998) into a change-of-state interpretation.

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(16) 才睡了一个小时困得快睁不开眼睛了。

cái shuì-le yī gè xiǎoshí kùn-dé kuài zhēng-bù-kāi-le
only sleep-PFV one CLF hour tired-DE almost open.eye-BU-open-PFV
yǎnjīng le
eye SFP

‘I only slept an hour, and was so tired that I almost became unable to open my eyes.’
(BCC)



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(17) 祖母一看不见了父亲，她顿时慌了。

Zǔmǔ *yī* *kàn-bù-jiàn-le* *fùqīn*, *tā* *dùnshí* *huāng-le*.
grandmother once look-BU-perceive-PFV father 3SG suddenly panic-PFV
'Once Grandmother became unable to see Father, she suddenly panicked.' (BCC)

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'Once Grandmother became unable to see Father, she suddenly panicked.' (BCC)

(18) 那个老人再也听不见了声息。

Nà *gè* *lǎorén* *zài* *yě* *tīng-bù-jiàn-le* *shēngxī*.
that CLF old.person again also hear-DE/BU-perceive-PFV sound
'That old person became unable to hear a sound again.' (BCC)

Mandarin V-*de/bu*-V compounds



The state that V-*de/bu*-V compounds introduce can be shifted in time.

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Context: Lao Wei could not kick and snap that plank last year, but after a year of training, he can kick and snap that plank this year.

Mandarin V-*de/bu*-V compounds



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(19) #老魏去年踢得断那条木板。

#*Lǎo Wèi* qùnián tī-dé-duàn nà tiáo mùbǎn.

Lao Wei last.year kick-DE-snap that CLF plank

‘Last year, Lao Wei was able to kick and snap that plank.’

Mandarin V-de/bu-V compounds



The state that V-de/bu-V compounds introduce can be shifted in time.

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Lao Wei last.year kick-DE-snap that CLF plank

‘Last year, Lao Wei was able to kick and snap that plank.’

(20) 老魏今年踢得断那条木板。

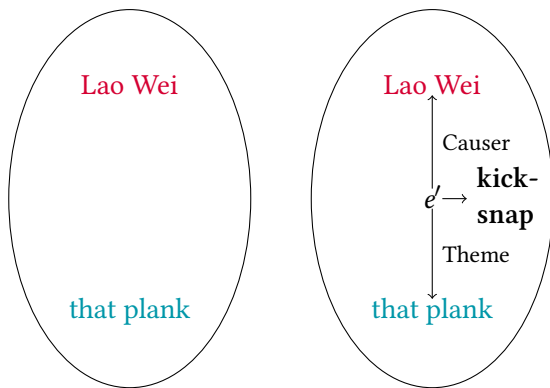
Lǎo Wèi jīnnián tī-dé-duàn nà tiáo mùbǎn.

Lao Wei this.year kick-DE-snap that CLF plank

‘This year, Lao Wei is able to kick and snap that plank.’

Mandarin V-*de/bu*-V compounds

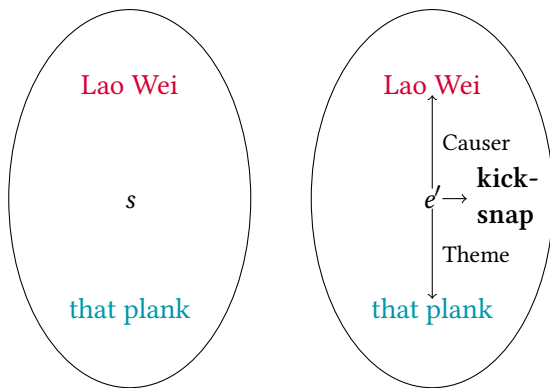
Modals return a (stative) eventuality in the actual world (Homer 2011; see also Hacquard 2006, 2009, 2010; Skibra 2020).



actual world w \xrightarrow{R} possible world w'

Mandarin V-*de/bu*-V compounds

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actual world $w \xrightarrow{R(s)} \text{possible world } w'$

Recap



- **Projectionist** approach: The **verb** introduces the thematic relation between the external argument and itself.



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- Non-projectionist approach: An external functional head, e.g. Voice, introduces the thematic relation between the external argument and the verb.
- Mandarin *V-de/bu-V* compounds contain a modal operator *de/bu* that takes scope over the thematic relation between V-V and its external argument.



- Projectionist approach: The verb introduces the thematic relation between the external argument and itself.
- Non-projectionist approach: An external functional head, e.g. Voice, introduces the thematic relation between the external argument and the verb.
- Mandarin *V-de/bu-V* compounds contain a modal operator *de/bu* that takes scope over the thematic relation between *V-V* and its external argument.
- Which of the two approaches can explain this fact?



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- V-V resultatives are compounds built in morphology, not syntax.

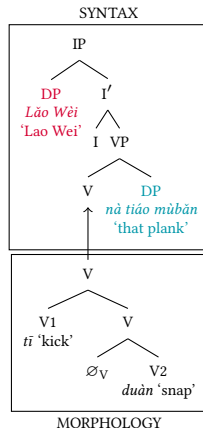
(21) 老魏踢断了那条木板。

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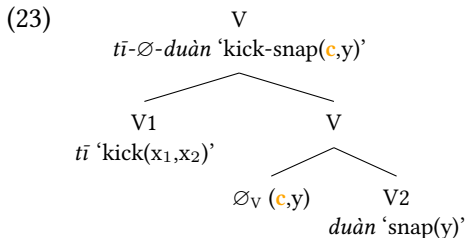
Lao Wei kick-snap-PFV that CLF plank

‘Lao Wei caused the plank to snap by kicking it.’

(22)



- V-V resultatives contain a null affix \emptyset that introduces the thematic relations between V-V and its arguments.



\emptyset denotes a macroevent e with two subevents: a causing event e_1 and a caused event e_2 .

$$(24) \llbracket \emptyset \rrbracket = \dots \lambda e \dots \exists e_2 \exists e_1. [\text{CAUSE}(e, e_1, e_2) \dots]$$

Proposal

\emptyset denotes a macroevent e with two subevents: a causing event e_1 and a caused event e_2 .

$$(24) \llbracket \emptyset \rrbracket = \dots \lambda e \dots \exists e_2 \exists e_1. [\text{CAUSE}(e, e_1, e_2) \dots]$$

The semantic content of e_2 and e_1 are supplied by the semantic predicates denoted by V2 and V1.

$$(25) \llbracket \emptyset \rrbracket = \lambda \mathbf{R}_2 \lambda \mathbf{R}_1 \dots \lambda e \dots \exists e_2 \exists e_1. [\text{CAUSE}(e, e_1, e_2) \wedge \dots \wedge \mathbf{R}_2(\mathbf{e}_2, \dots) \wedge \mathbf{R}_1(\mathbf{e}_1, \dots)]$$

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The semantic content of e_2 and e_1 are supplied by the semantic predicates denoted by V_2 and V_1 .

$$(25) \llbracket \emptyset \rrbracket = \lambda R_2 \lambda R_1 \dots \lambda e \dots \exists e_2 \exists e_1. [\text{CAUSE}(e, e_1, e_2) \wedge \dots \wedge R_2(e_2, \dots) \wedge R_1(e_1, \dots)]$$

\emptyset adds a causer.

$$(26) \llbracket \emptyset \rrbracket = \lambda R_2 \lambda R_1 \dots \lambda c \lambda e \dots \exists e_2 \exists e_1. [\text{CAUSE}(e, e_1, e_2) \wedge \text{Causer}(e) = c \wedge R_2(e_2, \dots) \wedge R_1(e_1, \dots)]$$

Proposal

\emptyset binds all available arguments of e_2 denoted by V2...

$$(27) \llbracket \emptyset \rrbracket = \lambda R_2 \lambda R_1 \lambda \mathbf{y} \lambda c \lambda e \dots \exists e_2 \exists e_1. [\text{CAUSE}(e, e_1, e_2) \wedge \text{Causer}(e) = c \wedge R_2(e_2, \mathbf{y}) \wedge R_1(e_1, \dots)]$$

Proposal

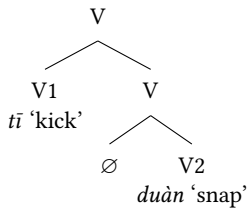
\emptyset binds all available arguments of e_2 denoted by V2...

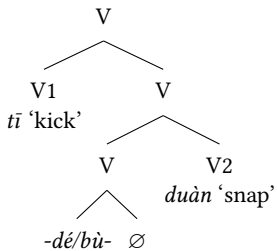
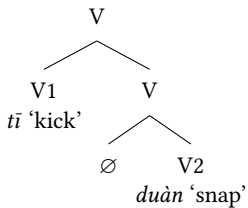
$$(27) \llbracket \emptyset \rrbracket = \lambda R_2 \lambda R_1 \lambda y \lambda c \lambda e \dots \exists e_2 \exists e_1. [\text{CAUSE}(e, e_1, e_2) \wedge \text{Causer}(e) = c \wedge R_2(e_2, y) \wedge R_1(e_1, \dots)]$$

but none of the arguments of e_1 denoted by V1.

$$(28) \llbracket \emptyset \rrbracket = \lambda R_2 \lambda R_1 \lambda y \lambda c \lambda e \exists \mathbf{x}_2 \exists \mathbf{x}_1 \exists e_2 \exists e_1. [\text{CAUSE}(e, e_1, e_2) \wedge \text{Causer}(e) = c \wedge R_2(e_2, y) \wedge R_1(e_1, \mathbf{x}_1, \mathbf{x}_2)]$$

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The thematic relations between V-V and its arguments are explicitly introduced under the scope of the modal operator.

$$(29) \llbracket d\acute{e} \rrbracket = \lambda P \lambda R_2 \lambda R_1 \lambda y \lambda c \lambda s \exists w'. [R(s, w') \wedge [\exists e'. P(R_2, R_1, y, c, e')]] \text{ in } w'$$

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cf. Tham (2012):

$$(30) \llbracket d\acute{e} \rrbracket = \lambda P \lambda w \exists w' \exists e. [R(w)(w') \wedge P(e)] \text{ in } w'$$

The thematic relations between V-V and its arguments are explicitly introduced **under the scope of the modal operator**.

$$(29) \llbracket d\acute{e} \rrbracket = \lambda P \lambda R_2 \lambda R_1 \lambda y \lambda c \lambda s \exists w'. [R(s, w') \wedge [\exists e'. P(R_2, R_1, y, c, e')]] \text{ in } w'$$

cf. Tham (2012):

$$(30) \llbracket d\acute{e} \rrbracket = \lambda P \lambda w \exists w' \exists e. [R(w)(w') \wedge P(e) \text{ in } w']$$

It is possible to analyse modal *bù* as the negation of *de*.

$$(31) \llbracket de \rrbracket = \lambda P \lambda R_2 \lambda R_1 \lambda y \lambda c \lambda s \exists w'. [R(s, w') \wedge [\exists e'. P(R_2, R_1, y, c, e')]] \text{ in } w'$$

$$(32) \llbracket bù \rrbracket = \lambda P \lambda R_2 \lambda R_1 \lambda y \lambda c \lambda s \neg \exists w'. [R(s, w') \wedge [\exists e'. P(R_2, R_1, y, c, e')]] \text{ in } w'$$

It is possible to analyse modal *bù* as the **negation** of *de*.

$$(31) \llbracket de \rrbracket = \lambda P \lambda R_2 \lambda R_1 \lambda y \lambda c \lambda s \exists w'. [R(s, w') \wedge [\exists e'. P(R_2, R_1, y, c, e')]] \text{ in } w'$$

$$(32) \llbracket bù \rrbracket = \lambda P \lambda R_2 \lambda R_1 \lambda y \lambda c \lambda s \neg \exists w'. [R(s, w') \wedge [\exists e'. P(R_2, R_1, y, c, e')]] \text{ in } w'$$

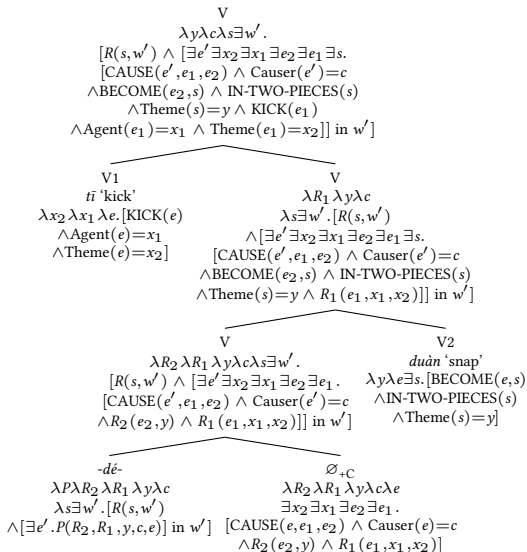
Alternatively, it is possible to analyse modal *bù* as *bù(dé)*, i.e., a simple negation marker *bù* + a null allomorph of modal *dé*.

$$(33) \llbracket bù \rrbracket = \lambda Q. \neg Q$$

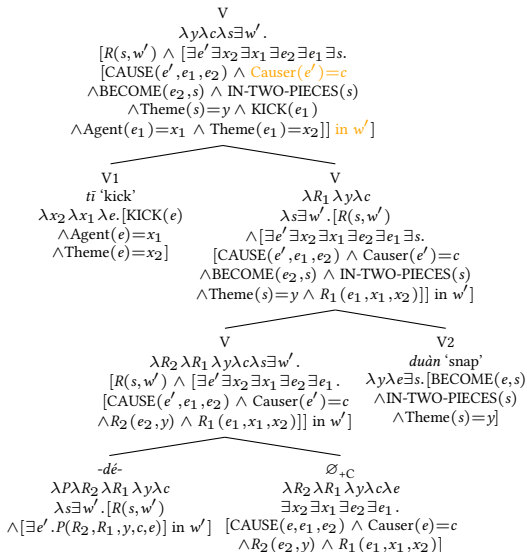
$$(34) \llbracket dé \rrbracket = \lambda P \lambda R_2 \lambda R_1 \lambda y \lambda c \lambda s \exists w'. [R(s, w') \wedge [\exists e'. P(R_2, R_1, y, c, e')]] \text{ in } w'$$

$$(35) \llbracket bù(dé) \rrbracket = \llbracket bù \rrbracket (\llbracket dé \rrbracket) \\ = \lambda P \lambda R_2 \lambda R_1 \lambda y \lambda c \lambda s \neg \exists w'. [R(s, w') \wedge [\exists e'. P(R_2, R_1, y, c, e')]] \text{ in } w'$$

(36)



(36)



Recap



- Mandarin V-*de/bu*-V compounds contain a modal operator *de/bu* that takes scope over the thematic relation between V-V and its external argument.

- Mandarin V-*de/bu*-V compounds contain a modal operator *de/bu* that takes scope over the thematic relation between V-V and its external argument.
- Projectionist approach:

- Mandarin V-*de/bu*-V compounds contain a modal operator *de/bu* that takes scope over the thematic relation between V-V and its external argument.
- Projectionist approach:
 - V-V resultatives contain a null affix \emptyset that introduces the thematic relations between V-V and its arguments.



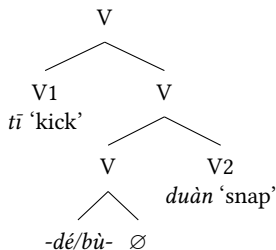
- Mandarin V-*de/bu*-V compounds contain a modal operator *de/bu* that takes scope over the thematic relation between V-V and its external argument.
- Projectionist approach:
 - V-V resultatives contain a null affix \emptyset that introduces the thematic relations between V-V and its arguments.
 - The modal operator *de/bu* selects this null affix \emptyset , and thus takes scope over these thematic relations.



- 1 Introducing arguments
- 2 Mandarin *V-de/bu-V* compounds
- 3 Proposal
- 4 Prediction**
- 5 Alternative analyses
- 6 Conclusion

- ★ The modal operator *de/bu* cannot take scope over any material external to the *V-de/bu-V* compound.

(37)



Prediction

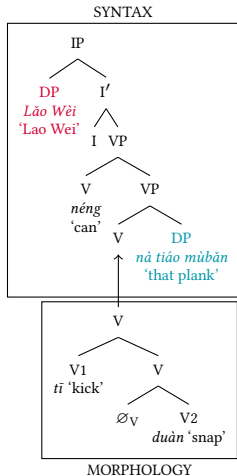
High modal *néng* ‘can’:

(38) 老魏能踢断那条木板。

Lǎo Wèi **néng** tī-duàn nà tiáo mùbǎn.

Lao Wei can kick-snap that CLF plank

‘Lao Wei can make that plank snap by kicking.’



Prediction

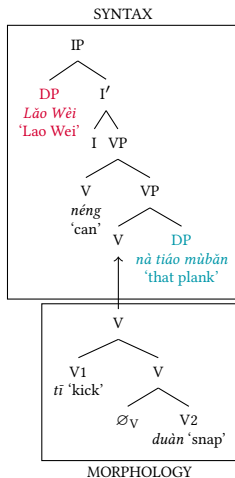


High modal *néng* 'can':

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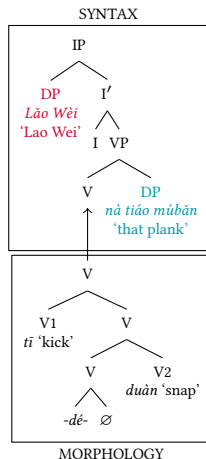


Low modal *dé*:

(39) 老魏踢得断那条木板。

Lǎo Wèi tī-dé-duàn nà tiáo mùbǎn.
Lao Wei kick-DE-snap that CLF plank

'Lao Wei can make that plank snap by kicking.'



Prediction #1: **de/bu* > *bǎ*

In a *bǎ*-construction, the canonical object appears in a preverbal position.

(40) 老魏踢断了那条木板。

Lǎo Wèi *tī-duàn-le* *nà* *tiáo* *mùbǎn*.

Lao Wei kick-snap-PFV that CLF plank

‘Lao Wei kicked and snapped that plank.’

Prediction #1: **de/bu* > *bǎ*



In a *bǎ*-construction, the canonical object appears in a preverbal position.

(40) 老魏踢断了那条木板。

Lǎo Wèi tī-duàn-le nà tiáo mùbǎn.

Lao Wei kick-snap-PFV that CLF plank

‘Lao Wei kicked and snapped that plank.’

(41) 老魏把那条木板踢断了。

Lǎo Wèi bǎ nà tiáo mùbǎn tī-duàn-le.

Lao Wei BA that CLF plank kick-snap-PFV

‘Lao Wei affected that plank by kicking and snapping it.’

Prediction #1: **de/bu* > *bǎ*

The modal *néng* ‘can’ can take scope over *bǎ*...

(42) 老魏(不)能把那条木板踢断。

Lǎo Wèi (bù) néng bǎ nà tiáo mùbǎn tī-duàn.

Lao Wei not can BA that CLF plank kick-snap

‘Lao Wei can(not) affect that plank by kicking and snapping it.’

Prediction #1: **de/bu* > *bǎ*



The modal *néng* ‘can’ can take scope over *bǎ*...

(42) 老魏(不) 能把那条木板踢断。

Lǎo Wèi (bù) néng bǎ nà tiáo mùbǎn tī-duàn.

Lao Wei not can BA that CLF plank kick-snap

‘Lao Wei can(not) affect that plank by kicking and snapping it.’

...but the modal operator *de/bu* cannot take scope over *bǎ*.

(43) #老魏把那条木板踢得/不断。

#Lǎo Wèi bǎ nà tiáo mùbǎn tī-dé/bù-duàn.

Lao Wei BA that CLF plank kick-DE/BU-snap

(i) ‘Lao Wei affected that plank by being (un)able to kick it and snap it.’ (#*bǎ* > *de/bu*)

(ii) ‘Lao Wei was (un)able to affect the plank by kicking and snapping it.’ (**de/bu* > *bǎ*)

Prediction #2: **de/bu* > *bèi*

In a *bèi*-construction (\approx passive), the canonical object appears in subject position.

(44) 老魏踢断了那条木板。

Lǎo Wèi *tī-duàn-le* *nà* *tiáo* *mùbǎn*.

Lao Wei kick-snap-PFV that CLF plank

‘Lao Wei kicked and snapped that plank.’

Prediction #2: **de/bu* > *bèi*



In a *bèi*-construction (\approx passive), the canonical object appears in subject position.

- (44) 老魏踢断了那条木板。

Lǎo Wèi tī-duàn-le nà tiáo mùbǎn.

Lao Wei kick-snap-PFV that CLF plank

‘Lao Wei kicked and snapped that plank.’

- (45) 那条木板被老魏踢断了。

Nà tiáo mùbǎn bèi Lǎo Wèi tī-duàn-le.

that CLF plank BEI Lao Wei kick-snap-PFV

‘That plank was affected by Lao Wei kicking and snapping it.’

Prediction #2: **de/bu* > *bèi*

The modal *néng* ‘can’ can take scope over *bèi*...

(46) 那条木板(不)能被老魏踢断。

Nà tiáo mùbǎn (bù) néng bèi Lǎo Wèi tī-duàn.

that CLF plank not can BEI Lao Wei kick-snap

‘That plank can be affected by Lao Wei kicking and snapping it.’

Prediction #2: **de/bu* > *bèi*



The modal *néng* ‘can’ can take scope over *bèi*...

(46) 那条木板(不)能被老魏踢断。

Nà tiáo mùbǎn (bù) néng bèi Lǎo Wèi tī-duàn.
that CLF plank not can BEI Lao Wei kick-snap

‘That plank can be affected by Lao Wei kicking and snapping it.’

...but the modal operator *de/bu* cannot take scope over *bèi*.

(47) #那条木板被老魏踢得/不断。

#Nà tiáo mùbǎn bèi Lǎo Wèi tī-dé/bù-duàn.
that CLF plank BEI Lao Wei kick-DE/BU-snap

(i) ‘That plank was affected by Lao Wei being (un)able to kick it and snap it.’

(#*bèi* > *de/bu*)

(ii) ‘That plank was (un)able to be affected by Lao Wei kicking and snapping it.’

(**de/bu* > *bèi*)

Prediction #3: **de/bu* > Adv



A manner adverb can take scope over the modal *néng* ‘can’...

(48) 坐在沙发上的程潇慢慢地不能睁开眼睛了。

Zuò zài shāfā de Chéngxiāo mànmande bù néng zhēng-kāi
sit at sofa DE Chengxiao slowly not can open.eye-open
yǎnjīng le.
eye SFP

‘Sitting on the sofa, Chengxiao slowly became unable to open his eyes.’

Prediction #3: **de/bu* > Adv



A manner adverb can take scope over the modal *néng* ‘can’...

- (48) 坐在沙发上的程潇慢慢地不能睁开眼睛了。

Zuò zài shāfā de Chéngxiāo mànmande bù néng zhēng-kāi
sit at sofa DE Chengxiao slowly not can open.eye-open
yǎnjīng le.
eye SFP

‘Sitting on the sofa, Chengxiao slowly became unable to open his eyes.’

- (49) 你已经慢慢地不能找到自己的梦想了。

Nǐ yǐjīng mànmande bù néng zhǎo-dào zìjǐ de mèngxiǎng le.
you already slowly not can search-reach self DE dream SFP

‘You have already slowly become unable to find your own dream.’

Prediction #3: **de/bu* > Adv



...and the modal *néng* ‘can’ can take scope over a manner adverb.

(50) 老魏(不) 能轻而易举地踢断那条木板。

Lǎo Wèi (bù) néng qīngéryìjǔ-de tī-duàn nà tiáo mùbǎn.

Lao Wei not can effortlessly kick-snap that CLF plank

‘Lao Wei was (un)able to effortlessly kick and snap that plank.’

Prediction #3: **de/bu* > Adv



A manner adverb can take scope over a V-*de/bu*-V compound...

(51) 坐在沙发上的程潇慢慢地睁不开眼睛了。

Zuò zài shāfā de Chéngxiāo mànmande zhēng-bù-kāi yǎnjīng le.
sit at sofa DE Chengxiao slowly open.eye-BU-open eye SFP

‘Sitting on the sofa, Chengxiao slowly became unable to open his eyes.’ (Internet)
(Adv > *de/bu*)

Prediction #3: **de/bu* > Adv



A manner adverb can take scope over a V-*de/bu*-V compound...

- (51) 坐在沙发上的程潇慢慢地睁不开眼睛了。

Zuò zài shāfā de Chéngxiāo mànmande zhēng-bù-kāi yǎnjīng le.
sit at sofa DE Chengxiao slowly open.eye-BU-open eye SFP

‘Sitting on the sofa, Chengxiao slowly became unable to open his eyes.’ (Internet)
(Adv > *de/bu*)

- (52) 你已经慢慢地找不到自己的梦想了。

Nǐ yǐjīng mànmande zhǎo-bù-dào zìjǐ de mèngxiǎng le.
you already slowly search-BU-reach self DE dream SFP

‘You have already slowly become unable to find your own dream.’ (Internet)
(Adv > *de/bu*)

Prediction #3: **de/bu* > Adv



...but the modal operator *de/bu* cannot take scope over a manner adverb.

(53) #老魏轻而易举地踢得/不断那条木板。

#Lǎo Wèi qīngéryījǔ-de tī-dé/bù-duàn nà tiáo mùbǎn.

Lao Wei effortlessly kick-DE/BU-snap that CLF plank

(i) 'Lao Wei was effortlessly (un)able to kick and snap that plank.'

(#effortlessly > *de/bu*)

(ii) 'Lao Wei was (un)able to effortlessly kick and snap that plank.'

(**de/bu* > effortlessly)

(adapted from Williams 2014:321)

Prediction #4: (**de/bu* > FreqP)

The modal *néng* ‘can’ can take scope over a postverbal frequency phrase, but the modal operator *de/bu* cannot.

Context: Zhangsan and Lisi are in a boxing competition. To win, Zhangsan must knock Lisi out three times.

Scenario 1: Zhangsan knocks Lisi out three times.

(54) 张三能击倒李四三次。

Zhāngsān néng jī-dǎo Lǐsì sān cì.
Zhangsan can hit-fall Lisi three time

‘Zhangsan could knock Lisi out three times.’

(55) ?张三击得倒李四三次。

?*Zhāngsān jī-dé-dǎo Lǐsì sān cì.*
Zhangsan hit-DE-fall Lisi three time

Intended: ‘Zhangsan could knock Lisi out three times.’ (**de/bu* > FreqP)

Prediction #4: (**de/bu* > FreqP)



The modal *néng* ‘can’ can take scope over a postverbal frequency phrase, but the modal operator *de/bu* cannot.

Context: Zhangsan and Lisi are in a boxing competition. To win, Zhangsan must knock Lisi out three times.

Scenario 2: Zhangsan knocks Lisi out two times.

(56) 张三不能击倒李四三次。

Zhāngsān *bù* *néng* *jī-dǎo* *Lǐsì* *sān* *cì*.
Zhangsan not can hit-fall Lisi three time

‘Zhangsan could not knock Lisi out three times.’

(57)??张三击不倒李四三次。

??*Zhāngsān* *jī-bù-dǎo* *Lǐsì* *sān* *cì*.
Zhangsan hit-BU-fall Lisi three time

Intended: ‘Zhangsan could not knock Lisi out three times.’ (**de/bu* > FreqP)

Prediction #4: (**de/bu* > FreqP)



The modal *néng* ‘can’ can take scope over a postverbal frequency phrase, but the modal operator *de/bu* cannot.

Context: Zhangsan and Lisi are in a boxing competition. To win, Zhangsan must knock Lisi out three times.

Scenario 3: Zhangsan only knocks Lisi out zero times.

(58) 张三不能击倒李四三次。

Zhāngsān *bù* *néng* *jī-dǎo* *Lǐsì* *sān* *cì*.
Zhangsan not can hit-fall Lisi three time

‘Zhangsan could not knock Lisi out three times.’

(59) *张三击不倒李四三次。

**Zhāngsān* *jī-bù-dǎo* *Lǐsì* *sān* *cì*.
Zhangsan hit-BU-fall Lisi three time

Intended: ‘Zhangsan could not knock Lisi out three times.’ (**de/bu* > FreqP)



- ★ The modal operator *de/bu* cannot take scope over any material external to the V-*de/bu*-V compound.

Scope	Prediction	Actual
<i>de/bu</i> > <i>bǎ</i>	✗	✗
<i>de/bu</i> > <i>bèi</i>	✗	✗
<i>de/bu</i> > preV Adv	✗	✗
<i>de/bu</i> > postV FreqP	✗	✗



- Mandarin V-*de/bu*-V compounds contain a modal operator *de/bu* that takes scope over the thematic relation between V-V and its external argument.
- Projectionist approach:
 - V-V resultatives contain a null affix \emptyset that introduces the thematic relations between V-V and its arguments.
 - The modal operator *de/bu* selects this null affix \emptyset , and thus takes scope over these thematic relations.

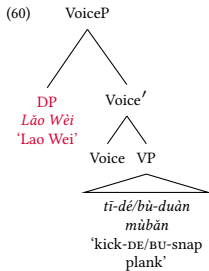


- Mandarin V-*de/bu*-V compounds contain a modal operator *de/bu* that takes scope over the thematic relation between V-V and its external argument.
- Projectionist approach:
 - V-V resultatives contain a null affix \emptyset that introduces the thematic relations between V-V and its arguments.
 - The modal operator *de/bu* selects this null affix \emptyset , and thus takes scope over these thematic relations.
 - ★ The modal operator *de/bu* cannot take scope over any material external to the V-*de/bu*-V compound.



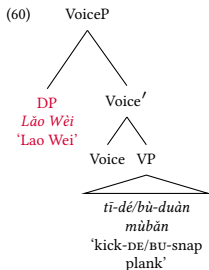
- 1 Introducing arguments
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Alternative #1:

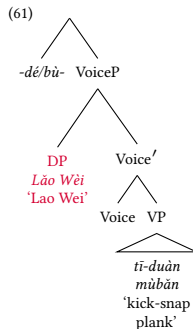


Alternative #2:

Alternative #1:



Alternative #2:



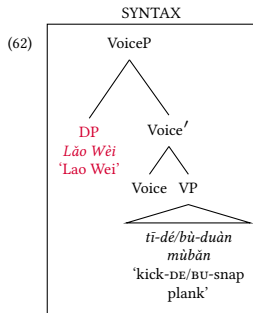
Alternative #1



Alternative #1a:

Alternative #1b:

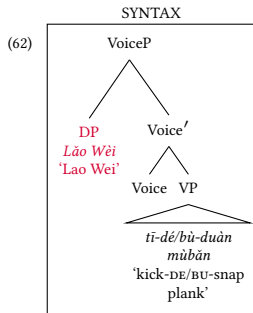
Alternative #1c:



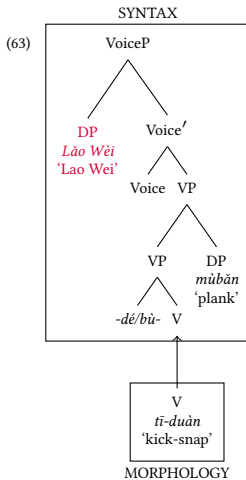
Alternative #1



Alternative #1a:



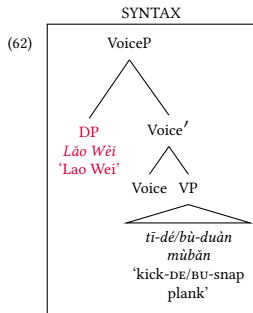
Alternative #1b:



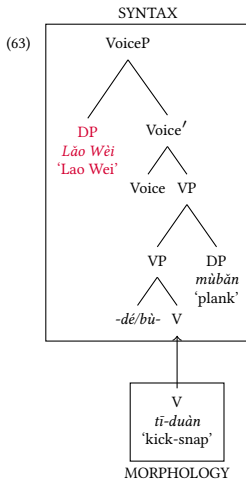
Alternative #1



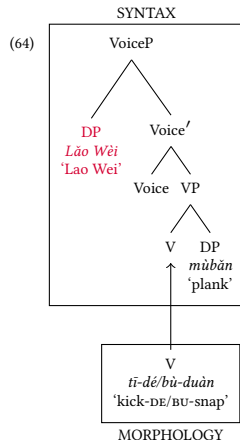
Alternative #1a:



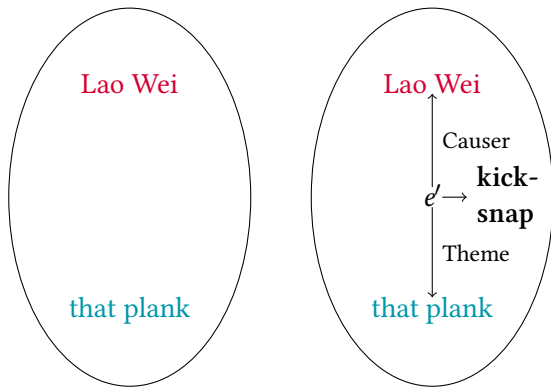
Alternative #1b:



Alternative #1c:

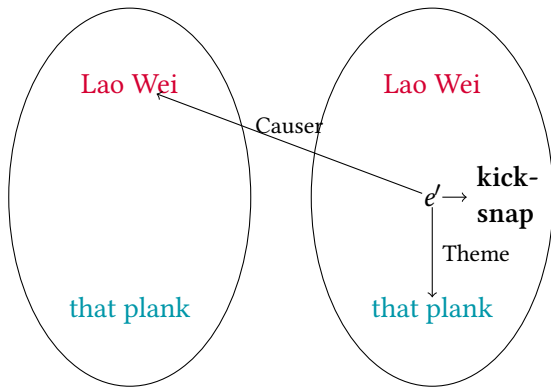


Alternative #1

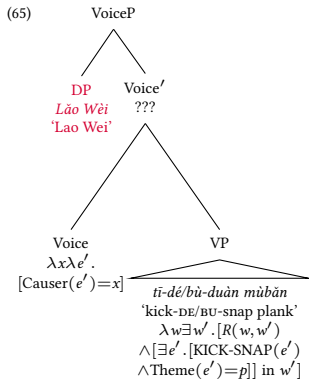


actual world $w \xrightarrow{R}$ possible world w'

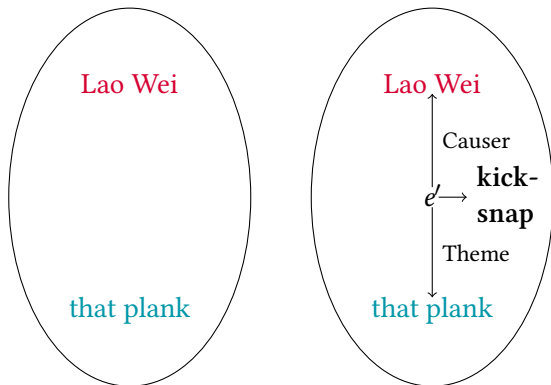
Alternative #1



actual world $w \xrightarrow{R}$ possible world w'

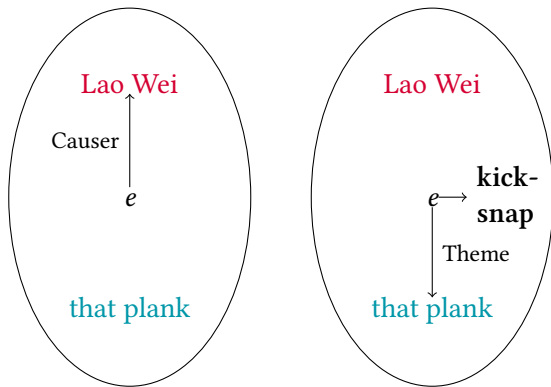


Alternative #1



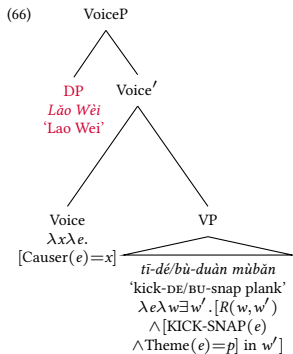
actual world w \xrightarrow{R} possible world w'

Alternative #1



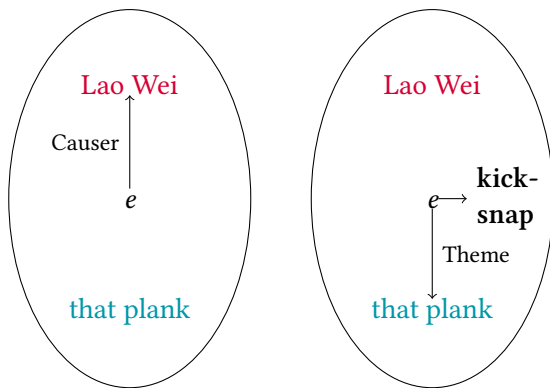
actual world $w \xrightarrow{R}$ possible world w'

Alternative #1



Alternative #1

But the event e in the actual world w is not always identical to the event e in the possible world w' (Skibra 2020).



actual world $w \xrightarrow{R}$ possible world w'

If the event *e* in the real world is identical to the event *e* in the possible world, one would predict that we could modify the event in the possible world with a manner adverb, but this prediction is not borne out.

(67) #老魏轻而易举地踢得/不断那条木板。

#*Lǎo Wèi qīngéryījǔ-de tī-dé/bù-duàn nà tiáo mùbǎn.*
Lao Wei effortlessly kick-DE/BU-snap that CLF plank

(i) 'Lao Wei was effortlessly (un)able to kick and snap that plank.'

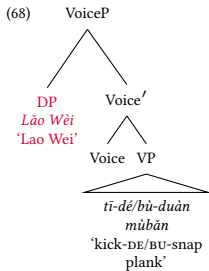
(#effortlessly > *de/bu*)

(ii) 'Lao Wei was (un)able to effortlessly kick and snap that plank.'

(**de/bu* > effortlessly)

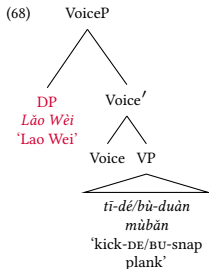
(adapted from Williams 2014:321)

Alternative #1:

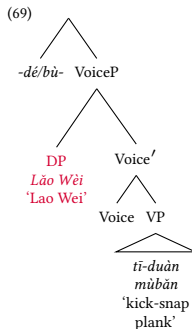


Alternative #2:

Alternative #1:



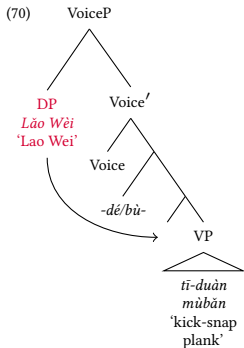
Alternative #2:



Alternative #2



Alternative #2a:

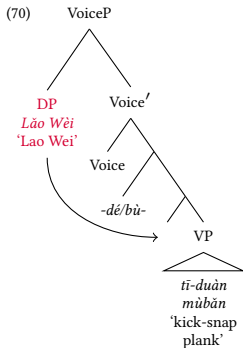


Alternative #2b:

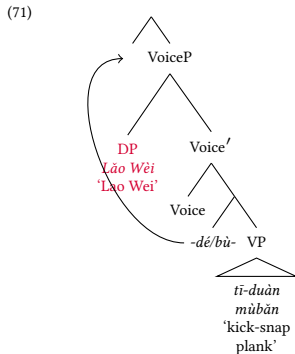
Alternative #2



Alternative #2a:



Alternative #2b:



Alternative #2d:

2)

The diagram shows a syntax tree for the sentence "Lao Wei kicked the plank". The root node branches into *-dé/bù-* and VoiceP. VoiceP branches into DP and Voice'. DP branches into *Lǎo Wèi* and *'Lao Wei'*. Voice' branches into Voice and VP. Voice branches into *tī* and *-duàn*. VP branches into *mùbǎn* and *'kick-snap plank'*.

-dé/bù- VoiceP

DP

Lǎo Wèi
'Lao Wei'

Voice'

Voice

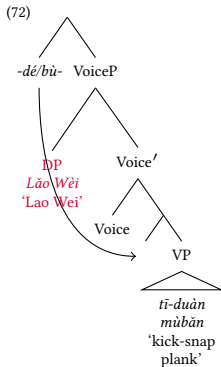
VP

tī-duàn
mùbǎn
'kick-snap plank'

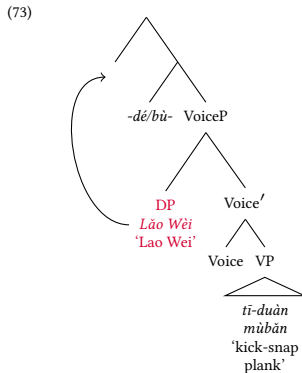
Alternative #2



Alternative #2c:



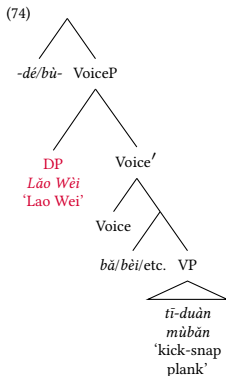
Alternative #2d:



Alternative analyses



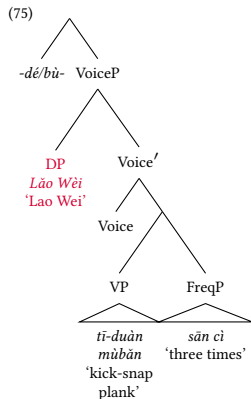
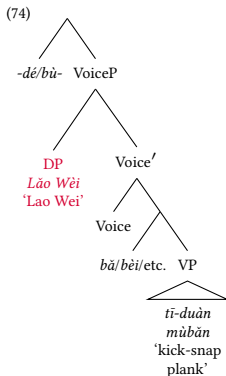
If *de/bu* is severed from a V-*de/bu*-V compound, one might expect that material could intervene between *de/bu* and V-V.



Alternative analyses



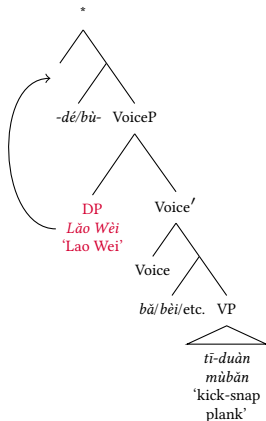
If *de/bu* is severed from a V-*de/bu*-V compound, one might expect that material could intervene between *de/bu* and V-V.



Alternative #2

It could be claimed that *bǎ*, *bèi* and preverbal modifiers cannot be merged below the modal operator *de/bu*, as they would intervene between *de/bu* and its phonological host V-V...

(76)

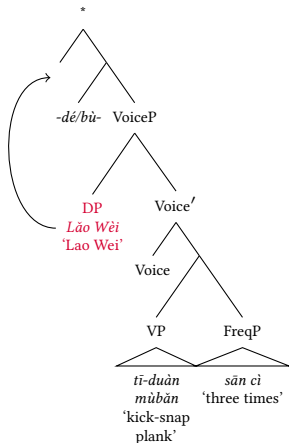


Alternative #2



...but this explanation cannot rule out postverbal modifiers merged below the modal operator *de/bu*.

(77)



Alternative #2



Alternative #2 also gives the wrong readings for sentences with a bare NumP subject.

(78) 三个人就推得倒那辆车。

Sān gè rén jiù tuī-dé-dǎo nà liǎng chē.
three CLF people then push-DE-topple that CLF car

‘(A group of) three people could make that car topple by pushing.’

(Williams 2005:258)

Alternative #2



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(Williams 2005:258)

(79) 这条鳄鱼又大又肥，几个人也拉不动它。

Zhè tiáo èyú yòu dà yòu féi, jǐ gè rén yě
this CLF crocodile both big and fat a.few CLF people also
lā-bù-dòng tā.
pull-BU-move it

‘This crocodile was so big and fat, a few people could not make it budge by pulling it.’ (BCC)

Suppose the bare NumP subject is an existential quantifier:

(80) 〔三个人 *sān gè rén* ‘three people’〕 = $\exists x. [\text{person}(x) \wedge |x|=3]$ (to be revised)

Alternative #2



Alternative #2 gives a reading of the positive V-*de*-V compound that is too weak.

(81) 三个人推得倒那辆车。

Sān gè rén tuī-dé-dǎo nà liǎng chē.
three CLF people push-DE-topple that CLF car

Not: 'It is possible that there exists a group of three people who pushed that car over.' (too weak)

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Not: 'It is possible that there exists a group of three people who pushed that car over.' (too weak)

(82) 三个人推不倒那辆车。

Sān gè rén tuī-bù-dǎo nà liǎng chē.
three CLF people push-BU-topple that CLF car

'It is not possible that there exists a group of three people who pushed that car over.'

But in addition to individual-denoting readings, bare NumPs also have a quantity-denoting reading that lacks existential force (Li 1998).

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(83) * 三个学生在学校受伤了。

**Sān gè xuéshēng zài xuéxiào shòushāng le.*
three CLF student at school hurt SFP

Intended: ‘Three students were hurt at school.’

(Li 1998:694)

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**Sān gè xuéshēng zài xuéxiào shòushāng le.*
three CLF student at school hurt SFP

Intended: ‘Three students were hurt at school.’

(Li 1998:694)

(84) 有三个学生在学校受伤了。

Yǒu sān gè xuéshēng zài xuéxiào shòushāng le.
have three CLF student at school hurt SFP

‘There are three students hurt at school.’

(Li 1998:694)

Suppose the bare NumP subject is not an existential quantifier, but denotes a property:

(85) $\llbracket \text{三个人 } s\bar{a}n\ g\grave{e}\ r\acute{e}n \text{ 'three people'} \rrbracket = \lambda x. [\text{person}(x) \wedge |x|=3]$

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The unbound variable x is bound by a silent GEN operator (\approx *generally*).

(86) $\llbracket \text{GEN} \rrbracket = \lambda Q \lambda P. \text{GEN } x. (P(x))(Q(x))$

If we assume that bare NumP subjects are bound by a generic operator, the readings are incoherent.

(87) 三个人推得倒那辆车。

Sān gè rén tuī-dé-dǎo nà liǎng chē.
three CLF people push-DE-topple that CLF car

Not: 'It is possible that a group of three people generally pushed that car over.'

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Not: 'It is possible that a group of three people generally pushed that car over.'

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three CLF people push-BU-topple that CLF car

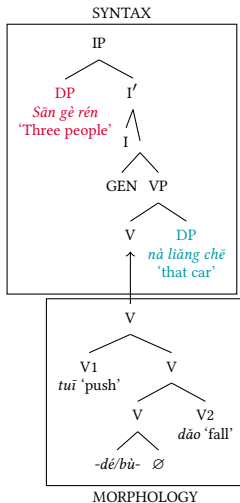
Not: 'It is not possible that a group of three people generally pushed that car over.'

(89) 三个人推 {得/不} 倒那辆车。

Sān gè rén tuī-dé/bù-dǎo
 three CLF person push-DE/BU-topple
nà liǎng chē.
 that CLF car

‘Three people could/n’t push that car over.’

(90)



We now get the right readings.

(91) 三个人推得倒那辆车。

Sān gè rén tuī-dé-dǎo nà liǎng chē.
three CLF people push-DE-topple that CLF car

‘A group of three people generally can push that car over.’

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(92) 三个人推不倒那辆车。

Sān gè rén tuī-bù-dǎo nà liǎng chē.
three CLF people push-BU-topple that CLF car

‘A group of three people generally cannot push that car over.’

Recap



- **Projectionist** approach: The **verb** introduces the thematic relation between the external argument and itself.



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- **Non-projectionist** approach: An external functional head, e.g. **Voice**, introduces the thematic relation between the external argument and the verb.



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- Non-projectionist approach: An external functional head, e.g. Voice, introduces the thematic relation between the external argument and the verb.
- Mandarin *V-de/bu-V* compounds contain a modal operator *de/bu* that takes scope over the thematic relation between V-V and its external argument.



- Projectionist approach: The verb introduces the thematic relation between the external argument and itself.
- Non-projectionist approach: An external functional head, e.g. Voice, introduces the thematic relation between the external argument and the verb.
- Mandarin *V-de/bu-V* compounds contain a modal operator *de/bu* that takes scope over the thematic relation between V-V and its external argument.
- Which of the two approaches can explain this fact?

Recap



- Projectionist approach:



- Projectionist approach:
 - V-V resultatives contain a null affix \emptyset that introduces the thematic relations between V-V and its arguments.



- Projectionist approach:
 - V-V resultatives contain a null affix \emptyset that introduces the thematic relations between V-V and its arguments.
 - The modal operator *de/bu* selects this null affix \emptyset , and thus takes scope over these thematic relations.



- Projectionist approach:
 - V-V resultatives contain a null affix \emptyset that introduces the thematic relations between V-V and its arguments.
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 - Anything else external to the V-*de/bu*-V compound is interpreted outside the scope of the modal operator.



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 - Anything else external to the V-*de/bu*-V compound is interpreted outside the scope of the modal operator.
- Non-projectionist approach:
 - These approaches give the wrong semantics &/ make incorrect predictions about the modification facts.



- 1 Introducing arguments
- 2 Mandarin *V-de/bu-V* compounds
- 3 Proposal
- 4 Prediction
- 5 Alternative analyses
- 6 Conclusion

Conclusion



- I have proposed a novel syntactic and semantic analysis of V-*de/bu*-V compounds in Mandarin Chinese.



- I have proposed a novel syntactic and semantic analysis of V-*de/bu*-V compounds in Mandarin Chinese.
- To the extent that this proposal is on the right track, it can be taken as evidence against the view that the external argument of a predicate is introduced by a functional head like Voice.



References I

- Bhatt, Rajesh. 1999. Covert modality in non-finite contexts. Doctoral dissertation, University of Pennsylvania.
- De Swart, Henriëtte. 1998. Aspect shift and coercion. *Natural Language & Linguistic Theory* 16:347–385.
- Hacquard, Valentine. 2006. Aspects of modality. Doctoral dissertation, MIT, Cambridge, MA.
- Hacquard, Valentine. 2009. On the interaction of aspect and modal auxiliaries. *Linguistics and Philosophy* 32:279–315.
- Hacquard, Valentine. 2010. On the event relativity of modal auxiliaries. *Natural Language Semantics* 18:79–114.
- Homer, Vincent. 2011. French modals and perfective: A case of aspectual coercion. In *Proceedings of the 28th West Coast Conference on Formal Linguistics*, ed. Mary Byram Washburn, Katherine McKinney-Bock, Erika Varis, Ann Sawyer, and Barbara Tomaszewicz, 106–114. Somerville, MA: Cascadilla Proceedings Project.



- Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase Structure and the Lexicon*, ed. Johan Rooryck and Laurie Zaring, 109–137. Dordrecht: Kluwer.
- Kripke, Saul A. 1959. A completeness theorem in modal logic. *Journal of Symbolic Logic* 24:1–14.
- Kripke, Saul A. 1963. Semantical analysis of modal logic I normal modal propositional calculi. *Mathematical Logic Quarterly* 9:67–96.
- Li, Yen-hui Audrey. 1998. Argument determiner phrases and number phrases. *Linguistic Inquiry* 29:693–702.
- Lin, Tzong-Hong Jonah. 2001. Light verb syntax and the theory of phrase structure. Doctoral dissertation, University of California, Irvine.
- Marantz, Alec. 1984. *On the nature of grammatical relations*. Number 10 in Linguistic Inquiry Monographs. Cambridge, Mass: MIT Press. Revision of thesis (Ph. D.)–MIT, 1981 Includes index.



- Skibra, Daniel. 2020. Modals and their arguments. Doctoral dissertation, Northwestern University, Evanston, IL.
- Tham, Shiao Wei. 2012. Result in Mandarin verb compounds. In *Proceedings of Sinn Und Bedeutung*, ed. Ana Aguilar Guevara, Anna Chernilovskaya, and Rick Nouwen, volume 16, 599–612.
- Williams, Alexander. 2005. Complex causatives and verbal valence. Doctoral dissertation, University of Pennsylvania.
- Williams, Alexander. 2014. Causal VVs in Mandarin. In *The Handbook of Chinese Linguistics*, ed. C.-T. James Huang, Y.-H. Audrey Li, and Andrew Simpson, 311–341. Hoboken, NJ: John Wiley & Sons, Inc.

Actuality implicatures



It may seem that *de/bu* takes scope only over V2 and not V1 because negative V-*bu*-V compounds have an actuality implicature which positive V-*de*-V compounds typically lack.

(93) 老魏踢得断那条木板。

Lǎo Wèi tī-dé-duàn nà tiáo mùbǎn.

Lao Wei kick-DE-snap that CLF plank

‘Lao Wei can make that plank snap by kicking.’

Not: ‘Lao Wei managed to make that plank snap by kicking.’

(adapted from Williams 2005:256-257)

(94) 老魏踢不断那条木板。

Lǎo Wèi tī-bù-duàn nà tiáo mùbǎn.

Lao Wei kick-BU-snap that CLF plank

‘Lao Wei cannot make that plank snap by kicking.’

Or: ‘Lao Wei did not manage to make that plank snap by kicking it.’

(adapted from Williams 2005:256-257)

But actuality implicatures or entailments have been observed in ability modals more generally.

- (95) *Yusuf havaii-jahaaz uraa sak-aa (#lekin us-ne havaii-jahaaz nahĩĩ*
Yusuf air-ship fly can-PFV but he air-ship NEG
uraa-yaa)
fly-PFV

‘Yusuf could fly the airplane, but he didn’t fly the airplane.’

(Bhatt 1999:176)

- (96) *Yusuf havaii-jahaaz uraa sak-taa hai/thaa (lekin vo havaii-jahaaz*
Yusuf air-ship fly can-IPFV be.PRS/be.PST but he air-ship
nahĩĩ uraa-taa hai/thaa)
NEG fly-IPFV be.PRS/be.PST

‘Yusuf is/was able to fly airplanes but he doesn’t/didn’t fly airplanes.’

(Bhatt 1999:176)

The actuality implicature in a negative V-*bu*-V compound arises due to pragmatic reasons.

(97) 老魏踢得断那条木板。

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(adapted from Williams 2005:256-257)

The actuality implicature in a negative *V-bu-V* compound arises due to pragmatic reasons.

Context: Lao Wei kicked the plank in the actual world and the plank snapped.

(99) 老魏踢断了那条木板。

Lǎo Wèi tī-duàn-le nà tiáo mùbǎn.

Lao Wei kick-snap-PFV that CLF plank

‘Lao Wei made that plank snap by kicking.’

(100) 老魏踢得断那条木板。

Lǎo Wèi tī-dé-duàn nà tiáo mùbǎn.

Lao Wei kick-DE-snap that CLF plank

‘Lao Wei can make that plank snap by kicking.’

Not: ‘Lao Wei managed to make that plank snap by kicking.’

(adapted from Williams 2005:256-257)

The actuality implicature in a negative *V-bu*-*V* compound arises due to pragmatic reasons.

Context: Lao Wei kicked the plank in the actual world but the plank did not snap.

(101) 老魏没踢断那条木板。

Lǎo Wèi méi tī-duàn nà tiáo mùbǎn.

Lao Wei not kick-snap that CLF plank

‘Lao Wei did not make that plank snap by kicking.’

(102) 老魏踢不断那条木板。

Lǎo Wèi tī-bù-duàn nà tiáo mùbǎn.

Lao Wei kick-BU-snap that CLF plank

‘Lao Wei can make that plank snap by kicking.’

Or: ‘Lao Wei did not manage to make that plank snap by kicking it.’

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